REMARKS

Claims 1-16 are in the case. Claims 1-4 have been amended to particularly point out and distinctly claim the invention and to avoid multiply dependent claims without narrowing the scope of claims. Claims 5-16 have been added. Supports for the amendment and newly added claims can be found in the entire specification and claims as originally filed, e.g., supports for claim 5 can be found in claim 3 before amendment and specification page 5, lines 11-13, for claim 6, on page 6, lines 1-4, for claims 7 and 8, on page 6, line 27 to page 7, line 12, for claims 9-12, in claim 1-4 before amendment, for claim 13, on page 5, lines 11-13, for claim 14, on page 6, lines 1-4, for claims 15-16, on page 6, line 27 to page 7, line 12. No new matter is believed to be introduced.

No fee, other than that for the extension of time, is believed due for the filing of this response. Should any fees be required, however, please charge such fees to Pennie & Edmonds LLP Deposit Account No. 16-1150.

Respectfully submitted,

(Limited Recognition)
for Charles Miller

Date: June 22, 2001

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APPENDIX A

1. (Once amended) A process **[Process]** for manufacturing hydrazine **[by hydrolysing an azine, which is carried out in a column]** **comprising**

providing a distillation column having a boiling vessel

[fed at the top] **feeding** **[with]** azine and water **[,]** **to the top of the distillation column;**

heating the azine and water in the column to hydrolyze the azine to produce hydrazine and ketone;

[and from which] **removing the** hydrazine **[is removed]** at **[the]** **a** bottom **of the column;** and

removing the ketone **[released is removed]** at the top **of the column**, **[characterized in that the]** **wherein** heat required for the **[reactions]** **hydrolyzing step** and the **[separation of the various components]** **removing steps** is **[partly]** supplied by **[means of a]** **the** boiling vessel and **[partly]** by injection **[, into at least one point of the column,]** of vaporized water **into the column**.

2. (Once amended) **The process** **[Process]** according to Claim 1, characterized in that the vaporized water is injected into the bottom of the column.

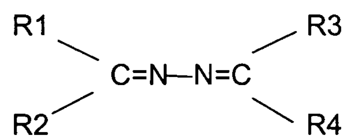
3. (Once amended) **The process** **[Process]** according to **[either of claims 1 and 2]** **claim 1**, characterized in that the amount of water injected in the form of vaporized water represents from 20 to 80 % **by weight** **[and preferably from 40 to 60 %]** of the total water.

4. (Once amended) **The process** **[Process]** according to **[one of Claims 1 to 3]** **claim 1**, characterized in that the vaporized water is at a temperature of between 130 and 220 °C and at relative pressure of between 3 and 18 bar.

5. (New) The process according to claim 1, wherein the amount of water injected in the form of vaporized water represents from 40 to 60 % of the total water.

6. (New) The process according to claim 1, wherein the vaporized water is injected into the column at two or more points of the column.

7. (New) The process according to claim 1, wherein the azine has the following formula:



wherein R1 to R4 are identical or different and are hydrogen, a linear alkyl radical containing from 1 to 12 carbon atoms, a branched alkyl radical or a cycloalkyl radical containing from 3 to 12 carbon atoms, R1 and R2 and/or R3 and R4 may connect to each other and can together represent a linear or branched alkylene radical containing from 3 to 12 carbon atoms which constitutes a cycle containing from 4 to 13 carbon atoms including the carbon atom directly connected to nitrogen atom, R1 to R4 may be substituted with chlorine, bromine, fluorine, or nitro, hydroxy or alkoxy group or an ester function.

8. (New) The process according to claim 7, wherein the azine is acetone azine or methyl ethyl ketazine.

9. (New) A process for manufacturing hydrazine, which comprises

feeding a distillation column having a boiling vessel with hydrazone and water at a top of the column;

heating the hydrazone and water in the column to hydrolyze the hydrazone to produce hydrazine and ketone;

removing the hydrazine at a bottom of the column; and

removing the ketone at the top of the column,

wherein heat required for the hydrolyzing step and the removing steps is supplied by the boiling vessel and by injection of vaporized water into the column.

10. (New) The process 9 according to Claim 9, characterized in that the vaporized water is injected into the bottom of the column.

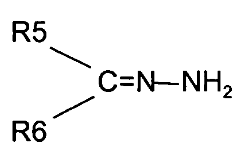
11. (New) The process according to claim 9, characterized in that the amount of water injected in the form of vaporized water represents from 20 to 80 % by weight of the total water.

12. (New) The process according to claim 9, characterized in that the vaporized water is at a temperature of between 130 and 220 °C and at relative pressure of between 3 and 18 bar.

13. (New) The process according to claim 9, wherein the amount of water injected in the form of vaporized water represents from 40 to 60 % of the total water.

14. (New) The process according to claim 9, wherein the vaporized water is injected into the column at two or more points of the column.

15. (New) The process according to claim 9, wherein the hydrazone has the following formula:



wherein R5 and R6 are identical or different and are hydrogen, a linear alkyl radical containing from 1 to 12 carbon atoms, a branched alkyl radical or a cycloalkyl radical containing from 3 to 12 carbon atoms, R5 and R6 may connect to each other and can together represent a linear or branched alkylene radical containing from 3 to 12 carbon atoms which constitutes a cycle containing from 4 to 13 carbon atoms including the carbon atom directly connected to nitrogen atom, R5 and R6 may be substituted with chlorine, bromine, fluorine, or nitro, hydroxy or alkoxy group or an ester function.

16. (New) The process according to claim 7, wherein the azine is acetone azine or methyl ethyl ketazine.

APPENDIX B

1. A process for manufacturing hydrazine comprising
providing a distillation column having a boiling vessel
feeding azine and water to the top of the distillation column;
heating the azine and water in the column to hydrolyze the azine to produce hydrazine and ketone;
removing the hydrazine at a bottom of the column; and
removing the ketone at the top of the column,
wherein heat required for the hydrolyzing step and the removing steps is supplied by the boiling vessel and by injection of vaporized water into the column.

2. The process according to Claim 1, characterized in that the vaporized water is injected into the bottom of the column.

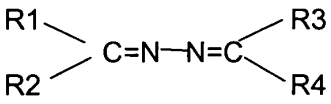
3. The process according to claim 1, characterized in that the amount of water injected in the form of vaporized water represents from 20 to 80 % by weight of the total water.

4. The process according to claim 1, characterized in that the vaporized water is at a temperature of between 130 and 220 °C and at relative pressure of between 3 and 18 bar.

5. The process according to claim 1, wherein the amount of water injected in the form of vaporized water represents from 40 to 60 % of the total water.

6. The process according to claim 1, wherein the vaporized water is injected into the column at two or more points of the column.

7. The process according to claim 1, wherein the azine has the following formula:



wherein R1 to R4 are identical or different and are hydrogen, a linear alkyl radical containing from 1 to 12 carbon atoms, a branched alkyl radical or a cycloalkyl radical containing from 3 to 12 carbon atoms, R1 and R2 and/or R3 and R4 may connect to each other and can together represent a linear or branched alkylene radical containing from 3 to 12 carbon atoms which constitutes a cycle containing from 4 to 13 carbon atoms including the carbon atom directly connected

to nitrogen atom, R1 to R4 may be substituted with chlorine, bromine, fluorine, or nitro, hydroxy or alkoxy group or an ester function.

8. The process according to claim 7, wherein the azine is acetone azine or methyl ethyl ketazine.

9. (New) A process for manufacturing hydrazine, which comprises
feeding a distillation column having a boiling vessel with hydrazone and water at a top of the column;
heating the hydrazone and water in the column to hydrolyze the hydrazone to produce hydrazine and ketone;
removing the hydrazine at a bottom of the column; and
removing the ketone at the top of the column,
wherein heat required for the hydrolyzing step and the removing steps is supplied by the boiling vessel and by injection of vaporized water into the column.

10. The process 9 according to Claim 9, characterized in that the vaporized water is injected into the bottom of the column.

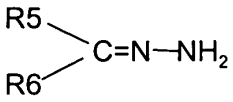
11. The process according to claim 9, characterized in that the amount of water injected in the form of vaporized water represents from 20 to 80 % by weight of the total water.

12. The process according to claim 9, characterized in that the vaporized water is at a temperature of between 130 and 220 °C and at relative pressure of between 3 and 18 bar.

13. The process according to claim 9, wherein the amount of water injected in the form of vaporized water represents from 40 to 60 % of the total water.

14. The process according to claim 9, wherein the vaporized water is injected into the column at two or more points of the column.

15. The process according to claim 9, wherein the hydrazone has the following formula:



wherein R5 and R6 are identical or different and are hydrogen, a linear alkyl radical containing from 1 to 12 carbon atoms, a branched alkyl radical or a cycloalkyl radical containing from 3 to 12 carbon atoms, R5 and R6 may connect to each other and can together represent a linear or branched alkylene radical containing from 3 to 12 carbon atoms which constitutes a cycle containing from 4 to 13 carbon atoms including the carbon atom directly connected to nitrogen atom, R5

and R6 may be substituted with chlorine, bromine, fluorine, or nitro, hydroxy or alkoxy group or an ester function.

16. The process according to claim 7, wherein the azine is acetone azine or methyl ethyl ketazine.

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UNITED STATE PATENT AND TRADEMARK OFFICE

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Expires: May 1, 2002

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Director of Enrollment and Discipline